February 17, 2004

For the past twenty five years duck hunters and wildlife managers have witnessed a steady decline in the number of scaup (bluebills) migrating through western Minnesota. A long held belief by hunters was that the birds had conveniently shifted their migration routes westward into the Dakotas where there was more water. Biologists and researchers now tell us that lesser scaup, the longtime "bread and butter" duck of the mid to late season duck hunter, are indeed experiencing undeniable population declines.

Scaup winter in Louisiana, move northward to the well-known Keokuk Pool in Missouri where they rest and feed for several weeks, and then migrate through Minnesota and the Dakotas to their primary nesting grounds in the forested areas north of the Canadian prairies. What researchers have found is that since the 1980s, Minnesota lakes and wetlands are becoming unproductive and offer insufficient nutrition to maintain female scaup in peak condition.

Concerned about this, wildlife researcher Dr. Alan Afton from Louisiana State University has been examining birds collected in Louisiana, the Keokuk Pool in Missouri, northwestern Minnesota, and Manitoba. He has found that the birds are in excellent physical condition when they leave Louisiana and arrive at Keokuk Pool; but as they move northward through Minnesota and the Dakotas, they experience a significant decrease in body fat, and mineral reserves. By the time they reach their northern breeding grounds, their energy reserves have become depleted.

Historically, scaup depended upon northern stopover areas in Minnesota and the Dakotas to build and accumulate body reserves. Now, however, the hens are losing weight in the move northward from Missouri and arrive at their nesting areas in poor physical condition. This is causing a delay in nesting activities and smaller clutches sizes.

When nesting is postponed it leads to lower nest success and decreased survival of the duck broods. This ultimately means a low recruitment of young birds into the population equating to a dwindling scaup population.

So what's wrong – what's happening? Scaup are kind of a "specialist" feeder. Unlike other diving ducks that feed on both insects and submerged aquatic plants, scaup feed almost exclusively on aquatic insects and small crustaceans.

The single most important food item to female scaup in the spring is what biologists call amphipods. Most waterfowl hunters and fishermen often refer to these as scuds or "fairy shrimp". The big problem for scaup is that the abundance and quality of amphipods has declined dramatically in the past twenty years. The amphipods are disappearing and so are scaup numbers.

This has created deep concern for waterfowl biologists and wildlife managers. Dr. Afton is currently drafting proposals to study this problem in much more detail. He and his colleagues will be looking at how large the geographical area is where female scuap are experiencing these weight losses. Their plans include color marking 3,000 to 5,000 scaup each year for the next several years.

Observers will monitor their northward migration and document scaup migration corridors through the upper Midwest. They will look at the availability of amphipods and how amphipod density affects the use of wetlands by scaup. Water clarity, density of aquatic plants, and other wetland characteristics will also be monitored.

Another big concern that the researchers will be investigating is the impacts that fish have on wetland communities. Increased precipitation and mild winters in recent years has allowed local fathead minnows to explode in many of our historical scaup resting and feeding areas. When minnows infest wetlands they consume large quantities of aquatic insects sending the wetland into a biological tailspin.

Aquatic insects act as natural water filters. When these insects are eaten by fish, the clear water becomes cloudy and underwater plants die because sunlight cannot penetrate the murky water. Without aquatic plants, insect numbers plummet even farther and scaup are left with an empty plate.

There are no easy answers or solutions to this whole issue of the scaup decline. The old theory that the birds are somewhere else is simply not true. The problem appears to be one covering a broad geographical area and deserves serious study by waterfowl biologists. At first glance, the dilemma facing lesser scaup seems mostly to be an expression of the continual deterioration in the quality of our wetlands. The proposed study may verify this problem soon, but the solution does not appear to be one that can be solved anytime soon.

Chuck Vukonich
U.S. Fish and Wildlife Service